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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/501,023 | 07/09/2004 | Kenichi Kitano | 35355/38 | 3048 |
| 23838 7590 04/05/2007 KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005 | | | EXAMINER RABAGO, ROBERTO | |
| | | | ART UNIT 1713 | PAPER NUMBER |
| SHORTENED STATUTORY PERIOD OF RESPONSE | | | MAIL DATE | DELIVERY MODE |
| 3 MONTHS | | | 04/05/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/501,023

Applicant(s)

KITANO ET AL.

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 22-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/22/06; 7/9/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1-21, with election of species, in the reply filed on 12/28/2006 is acknowledged.

Applicant's remarks alleging that a requirement for Election of Species is improper in an application filed under 35 U.S.C. 371 is not correct; MPEP 1893.03(d) specifically addresses this issue, and provides a protocol for structuring a requirement for election of species in a 371 application. However, following a search of the elected species, the remaining species are joined for examination.

Information Disclosure Statement

2. The Japanese language references cited on the IDS filed 7/9/2004 have been considered solely on the basis of English language abstracts provide by applicants, and any discussion thereof in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1 (and all claims dependent thereon) includes the limitation "the vinyl polymer being produced by atom transfer radical polymerization." The phrasing of the clause is unclear in that it cannot be determined whether this feature is: (i) a required method step comprising polymerization of a vinyl monomer by atom transfer radical polymerization, or (ii) a product-by-process description of the vinyl polymer.

(b) In claims 12 and 13 (and claim 14 as dependent thereon), it cannot be determined which, if any, of the recited procedures are required method steps, or if they correspond to product-by-process limitations. Specifically, the features preceded by "produced by," "transformed into" and "by reaction of," appear to recite process steps, but the language used confuses the distinction between a required method step and a product-by-process limitation.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 1, 4, and 6-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/59960. A print copy of the reference was not available to the examiner at the time of this Office action, and therefore the corresponding US patent 7,030,194 filed under 35 U.S.C. 371 will be discussed. Should applicants require a print copy of the WO document, such request should be made in their response to this Office action; however, the full content of the WO document is deemed to be provided in the cited US patent.

The reference discloses in Production Example 1 the making of a butyl acrylate polymer by ATRP, followed in Example 1 with dehalogenation at 70°C in the presence of potassium benzoate under reduced pressure, followed by filtration through alumina. The examples include all claimed limitations except for the use of a temperature within the claimed range. However, one of ordinary skill in the art would be motivated to use the claimed temperatures because the reference recommends a dehalogenation temperature of up to 200°C, with a recommended range including up to 150°C (col. 17, lines 50-60). The reference has not described the polymer in the same manner as in claims 8-13; however, the reference polymer would appear to have these features in view of the fact that it has been made by a method which is substantially identical to applicants' Preparation Example 1. The burden of proof is shifted to applicants to show that the reference example would not have the claimed unreported properties.

Applicants' comparative examples are noted; however, they do not provide evidence of unexpected results because they do not make comparison with the reference method. Specifically, the reference method includes contact with potassium

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benzoate and dimethylacetamide at 70°C during the dehalogenation step, and has reduced the halogen content from 11,000 ppm to 1,000 ppm. In contrast, applicants' comparative example 1 does not include potassium benzoate or dimethylacetamide, and although heated to 130°C, has achieved a much smaller halogen reduction of from 4,900 ppm to 3,800 ppm. Therefore, the showing does not provide a basis for unexpected results in comparison with the recommended reference methods.

7. Claims 1, 6 and 15-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/54365.

The reference discloses in Examples 1-4 the making of a methyl methacrylate polymer by ATRP, followed by dehalogenation at 110°C in the presence of an olefinically unsaturated compound. The examples include all claimed limitations except for a polymer with the claimed Mn, the use of a temperature and pressure within the claimed range, and subsequent filtration. However, one of ordinary skill in the art would be motivated to use a polymer of the claimed Mn because they have been recommended in the paragraph bridging pages 24-25, and use the claimed temperatures and pressures because the reference recommends a dehalogenation temperature of up to 200°C and pressure as low as 0.1 atm, with a preferred temperature of up to 160°C (page 27, lines 1-11). The cited examples have not reported the halogen content of the dehalogenated polymers; however, the claimed halogen content would either be inherent in the cited examples or obvious in view of the

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reference disclosure that the method can obtain >90% dehalogenation (page 27, lines 3-9). Filtration techniques are recommended at page 30, lines 10-18.

Applicants' comparative examples are noted; however, they do not provide evidence of unexpected results because they do not make comparison with the reference method. Specifically, the reference method includes contact with an olefinically unsaturated compound during the dehalogenation step. In contrast, applicants' comparative example 1 appears to require a substantially different reaction mechanism. Therefore, the showing does not provide a basis for unexpected results in comparison with the recommended reference methods.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Roberto Rábago
Primary Examiner
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RR
March 30, 2007